REMARKS

By this Amendment, Applicant cancels claims 18, 31, and 32 without disclaimer or prejudice to the filing of subsequent applications to the subject matter of the cancelled claims. Accordingly, claims 1-17 and 19-30 are all the claims pending in the application.

I.   Formal Matters

The Examiner has returned the forms PTO/SB/08 submitted with the Information Disclosure Statements filed on May 15, 2006, and February 22, 2007, but all of the documents cited therein have been crossed out, indicating that they have not been considered. Applicant respectfully notes that the foreign reference and non-patent literature cited therein are present in the Image File Wrapper.

Applicant respectfully notes that 37 C.F.R. § 1.98 requires copies of translations for non-English language documents only when a written English-language translation of a non-English-language document, or portion thereof, is within the possession, custody, or control of, or is readily available to any individual designated in 37 C.F.R. § 1.56(c). Applicants have previously submitted a concise explanation of the relevance which is fully in accord with MPEP § 609. Therefore it is the obligation of the Examiner to consider these references.

Applicant respectfully submits that the Examiner may request translations of pertinent portions of references being considered for citation or already cited in the application from the USPTO translation facilities. The Examiner is directed to MPEP § 901.05(d). Accordingly, the Examiner is respectfully requested to return the initialed forms PTO/SB/08 indicating that the cited materials have been considered..

II.   Claim Rejections under 35 U.S.C. § 101

The Examiner rejected claims 1-32 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. The Examiner asserts that the claims are directed to an abstract concept and fail to provide a useful, concrete, or tangible result. Applicant respectfully traverses this rejection and respectfully requests the Examiner to reconsider this rejection at least in light of the comments which follow.

Claims 1, 4, 5, 10, 13, 14, and 15 are independent. Turning first to claim 1, the claim is clearly directed to a practical application of an idea with a useful, concrete, and tangible result. Claim 1, for example, is directed to a practical implementation of an active learning method. Claim 1 recites various apparatuses, such as a storage device and a plurality of learning machines. Claim 1 is directed a specific implementation of an active learning method.

Moreover, the claim recites a useful, concrete, and tangible result: entering a label value corresponding to the data to be next learned and deleting the data, the label value of which has been entered, from the set of unknown data, and adding the data to the set of known data.

This label value represents useful, concrete, and tangible things in the real world and is not merely an abstract value. By way of example, and not for purposes of limitation, the label value may represent a determination of whether or not golf should be played based upon a set of environmental conditions. *See* page 2, lines 9-21 of the Specification.

The unknown data is data having unknown label values (*see* page 12, line 22). The data is also described as having various attributes (*see* page 2, lines 8-9). Similar to labels, attributes represent useful, concrete, and tangible things in the real world, such as, by way of example and not for purposes of limitation, weather, temperature, humidity, and wind force. *See* page 2, lines 9-21 of the Specification. Thus, data having an unknown label value, the representing real-world

values such as weather in the example above, is transformed through a series of mathematical calculations in order to arrive at a resulting label value, which also represents a real-world value, such as whether or not golf should be played in the example above.

The transformation of data by a machine through a series of mathematical calculations into a useful, concrete, and tangible result constitutes a practical application of a mathematical algorithm, formula, or calculation and is thus statutory subject matter under 35 U.S.C. § 101.

The Federal Circuit held that "the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result'--a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

The label data, similar to the final share price, represents a useful, concrete, and tangible result. The label data is useful and has concrete, tangible real-world meaning. Furthermore, the operations recited in the claim represent not an abstract idea but rather a practical application with the useful, concrete, and tangible result described above.

For example, claim 1 recites, *inter alia*, said "plurality of learning machines sampling the known data from said storage device independently of one another." This feature represents a design of a practical application, not merely an abstract idea. Similarly, claim 1 recites, *inter alia*, "wherein non-uniform weighting is performed at least one of when the known data is sampled, when the results of the learning by said plurality of learning machines are integrated, and when the data to be next learned is calculated from the predictions by said plurality of

learning machines." This feature also represents a design of a practical application, not merely an abstract idea.

With respect to performing non-uniform weighting when the known data is sampled, the Specification discloses an exemplary embodiment in which a sampling weighting device generates weights based on data sent from a storage device, or reads such weights, and sends the weights to respective sampling device. Each sampling device samples the known data in a storage device while weighting the data in accordance with the weight sent from the sampling weighting device, and sends the sampled data to the corresponding learning machine. *See* page 15, lines 7-14 of the Specification. Thus, the weighting and sampling recited in claim 1 is a concrete practical application, as are the plurality of learning machines that sample the known data.

Accordingly, Applicant respectfully submits that since claim 1 represents a practical application of an idea and transforms data that represent concrete, real-world values to produce a final result that is useful, concrete, and tangible, the claim is patentable under 35 U.S.C. § 101.

Independent claims 4, 5, 10, 13, 14, and 15 recite features similar to, although not necessarily coextensive with, the features discussed above with respect to claim 1. Consequently, Applicant respectfully submits that claims 4, 5, 10, 13, 14, and 15 are also directed to practical implementations that produce final results that are useful, concrete, and tangible. Accordingly, Applicant respectfully submits that claims 4, 5, 10, 13, 14, and 15 are patentable under 35 U.S.C. § 101. Applicant respectfully submits that claims 2, 3, 6-9, 11, 12, 16, 17, and 19-30 are patentable under 35 U.S.C. § 101 by virtue of their dependency on claims 1, 4, 5, 10, 13, 14, or 15.

Turning now to independent claim 15, the claim has been amended to recite, *inter alia*, "[a] computer program product for causing a computer to perform active learning, said computer program product including a computer readable medium bearing software instructions for enabling said computer to perform predetermined operations." Thus, claim 15 is directed to a computer program product embodied on computer readable medium. While the claimed subject matter may be considered functional descriptive material, "[w]hen functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." *See* MPEP § 2106.01.

Claim 15 is directed to a computer program product embodied on computer readable medium. Thus, it is structurally and functionally interrelated to the medium and is statutory at least because use of technology permits the function of the descriptive material to be realized. Furthermore, at least one "useful, concrete and tangible" result is the entering, using a result input means, a label value corresponding to the data to be next learned.

In addition to the previously discussed reasons, for at least these reasons, Applicant respectfully submits that claim 15 is directed to statutory subject matter and patentable under 35 U.S.C. § 101. Applicant respectfully submits that claims 16 and 17 are patentable under 35 U.S.C. § 101 at least by virtue of their dependency on claim 15.

III.   Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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